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## PHALANGIDA FROM BARRO COLORADO ISLAND, CANAL ZONE


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Although considerable work, both ecological and taxonomic, has been done on Barro Colorado Island, Canal Zone, only a few phalangids have been described. The few described were published by Dr. R. V. Chamberlin in 1925 from collections made by Dr. W. C. Allee of the University of Chicago. The writers were able to study this collection at the Museum of Comparative Zoölogy, Cambridge, Massachusetts, and most of the species have been redescribed in this paper. In addition, two other excellent collections were available for study: one made by Dr. W. J. Gertsch in 1936, and a second, the result of an ecological study in 1938 by Dr. E. C. Williams, Jr., of the Chicago Academy of Sciences. A few other collectors also contributed their specimens. Dr. Gertsch has previously reported on the other arachnids in Dr. Williams' collection.

With this report there are now twenty-four species representing sixteen genera known from Barro Colorado Island. The writers are convinced that, notwithstanding these excellent collections, only a small portion of the Barro Colorado phalangid fauna is represented.


The writers wish especially to thank Dr. Williams and Dr. Gertsch for placing these collections at their disposal. They are also indebted to Dr. Nathan Banks of the Museum of Comparative Zoölogy for permission to study Dr. Chamberlin's types.

The types of the new species are deposited in the collection of The American Museum of Natural History.


### SUBORDER LANIATORES THORELL

#### PHALANGODIDAE Simon
#### Phalangodinae Roewer
#### Cippanus adornus, new species

Figures 5, 6, 7, 8 and 9

MALE.—Total length of body, 2.0 mm. Cephalothorax, 0.6 mm. Width of body at widest portion, 1.5 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.2 mm. | 0.2 mm. |
| Femur | 0.5 | 0.9 |
| Patella | 0.3 | 0.4 |
| Tibia | 0.5 | 0.8 |
| Metatarsus | 0.7 | 1.0 |
| Tarsus | 0.4 | 0.7 |
| Total | 2.6 mm. | 4.0 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.3 mm. | 0.4 mm. |
| Femur | 0.6 | 1.3 |
| Patella | 0.3 | 0.6 |
| Tibia | 0.5 | 1.5 |
| Metatarsus | 1.0 | 1.8 |
| Tarsus | 0.6 | 0.5 |
| Total | 3.3 mm. | 6.1 mm. |

Dorsum (Fig. 5) with five distinct areas which are strongly curved, boundaries parallel to each other. First area without a median line. Eye tubercle (Fig. 9) in the form of a rounded cone, not situated on the anterior margin of the cephalothorax. Dorsal scute unarmed, except for an acute spine at the posterior lateral corner. First free tergite armed only with a spine at the posterior lateral margin; second free tergite with a pair of short median spines; third free tergite with a median pair of long spines, a smaller spine on the median line and another smaller spine laterad to the paired median spines. Anal operculum (Fig. 6) with a prominent median spine, a smaller spine on either side and a pair of small spines anterior to the median spines. There are also a few other small tubercles present on the anal operculum. Only the seventh free sternite tuberculate, but the sixth free sternite with a pair of small spines on either side; the remaining free sternites armed with only small tubercles. Venter and coxae clothed only with scattered hairs. Spiracle not visible.

Legs: fourth coxae with lateral teeth on the anterior and posterior margins. Legs clothed with scattered hairs, basal segments of legs strongly tuberculate. The fourth femur (Fig. 7)

with two rows of spines on the ventral surface. A few spines at the distal portion of the tibia. The fourth trochanter has a sharp spine at the distal posterior margin. Tarsal segments: 3–6–5–5. End group of segments of first leg, 2; of second, 3.

Palpus: trochanter, 0.2 mm. long; femur, 0.4; patella, 0.3; tibia, 0.4; and tarsus, 0.3. Total length, 1.6 mm. Armed as in Fig. 8, and in addition on the prolateral margin at the median apical portion, a spine-bearing tubercle on both the femur and the patella.

Chelicerae normal, with a slight elevation on the first segment.

Dorsum yellowish brown with black markings more or less outlining the areas. A large dark spot on the median line of each area and at the lateral portion of the abdomen. A few black mottlings on the cephalothorax, some on the fourth coxae and the free tergites. Venter, legs, chelicerae and proximal segments of the palpus reddish brown, distal portion of the palpus and the tarsi of the legs yellowish.

FEMALE.—Total length of body, 2.0 mm. Cephalothorax, 0.4 mm. Width of body at widest portion, 1.3 mm.

Identical in appearance to male.

TYPE LOCALITY.—Male holotype and male and female paratypes from Barro Colorado Island, Canal Zone, July 6 to August 4, 1938 (E. C. Williams, Jr.). Male paratype, December, 1937 (K. W. Cooper).

*Cippanus adornus* differs from *Cippanus calcartibialis* Roewer in the number of tarsal segments on the third tarsus, and in the lateral spines of the free tergites and anal operculum.

### ETHOBUNUS CHAMBERLIN

*Ethobunus* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 245.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 536.

Dorsal scute with five distinct areas, boundaries parallel, first area without a median line. First four areas with median paired spines, second and third free tergites with median paired spines. Fifth area and remaining free tergites unarmed. Eye tubercle clearly removed from the anterior margin of the cephalothorax, with a spine over each carina. Tarsal segments: 3–more than 6–5–6. End group of segments of first leg, 2; of second, 3.

GENOTYPE.—*Ethobunus simplex* Chamberlin.

### Ethobunus simplex Chamberlin

Figures 22, 23 and 24

*Ethobunus simplex* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 245.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 536.

MALE.—Total length of body, 2.7 mm. Cephalothorax, 0.7 mm. Width of body at widest portion, 1.9 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.3 mm. | 0.4 mm. |
| Femur | 1.2 | 2.2 |
| Patella | 0.4 | 0.5 |
| Tibia | 0.9 | 1.9 |
| Metatarsus | 1.5 | 2.6 |
| Tarsus | 0.8 | 2.2 |
| Total | 5.1 mm. | 9.8 mm. |
| | III | IV |
| Trochanter | 0.4 mm. | 0.4 mm. |
| Femur | 2.2 | 2.7 |
| Patella | 0.5 | 0.8 |
| Tibia | 1.9 | 1.7 |
| Metatarsus | 2.2 | 3.4 |
| Tarsus | 1.2 | 1.2 |
| Total | 8.4 mm. | 10.2 mm. |

Dorsal scute (Fig. 22) with five distinct areas, boundaries parallel, first area without a median line. First four areas armed with median paired spines, arranged as follows: the spines of the first area very small and close together near the median line; the spines of the second area farther apart, more robust; paired spines of the third and fourth areas somewhat more divergent and larger. In addition on the first area there is a spine on either side midway between the median spines and the lateral margin. The second and third free tergites with median spines. All dorsal spines are 0.2 mm. long, appearing to be tubercles except for their greater size. The bases are small. There are a few small tubercles along the anterior lateral margin of the abdomen, remainder of the abdomen smooth. Eye tubercle (Fig. 24) clearly removed from the anterior margin of the cephalothorax with a spine above each carina. Venter and coxae covered only with a few granulations, third coxae with lateral teeth on the anterior and posterior margins. Dorsally the second coxae have a few small tubercles which are arranged in an arc, visible from above. Spiracle not visible.

Legs: first and second femora with a row of small tubercles, remainder of legs clothed with scattered hairs. Tarsal segments: 3–8–5–6. End group of segments of first leg, 2; of second, 3.

Palpus: trochanter, 0.3 mm. long; femur, 0.6; patella, 0.4; tibia, 0.4; and tarsus, 0.4. Total length, 2.1 mm. Palpus as in Fig. 23, and in addition on the prolateral margin at the median apical portion of the femur a spine-bearing tubercle, one on the median portion of the patella, and an additional small spine-bearing tubercle at the proximal portion of the tibia.

Chelicerae normal, second segment with a slight dorsal elevation.

Dorsum bright reddish brown, cephalothorax somewhat mottled, spines over eyes lighter; median spines of the second, third and fourth areas, of the second and third free tergites and the outer spines of the first area white, contrasting strongly with the dorsal coloration. Venter and coxae concolorous, trochanters lighter, remainder of legs concolorous. Chelicerae slightly lighter than the dorsum. Palpi much lighter.

FEMALE.—Total length of body, 2.9 mm. Cephalothorax, 0.8 mm. Width of body at widest portion, 1.9 mm.

Identical in appearance with male.

TYPE LOCALITY.—Holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Numerous males and females from the same locality, February 6, 1936 (W. J. Gertsch), and July 19 and 29, 1938 (E. C. Williams, Jr.).

### **Mexscotolemon insularus,** new species

Figures 1, 2, 3 and 4

MALE.—Total length of body, 2.9 mm. Cephalothorax, 0.9 mm. Width of body at widest portion, 2.4 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.3 mm. | 0.3 mm. |
| Femur | 1.1 | 1.5 |
| Patella | 0.5 | 0.8 |
| Tibia | 0.8 | 1.3 |
| Metatarsus | 1.1 | 1.4 |
| Tarsus | 0.6 | 1.6 |
| Total | 4.4 mm. | 6.9 mm. |
| | III | IV |
| Trochanter | 0.4 mm. | 0.4 mm. |
| Femur | 1.4 | 2.5 |
| Patella | 0.5 | 0.9 |
| Tibia | 1.1 | 2.4 |
| Metatarsus | 1.5 | 2.7 |
| Tarsus | 0.9 | 1.2 |
| Total | 5.8 mm. | 10.1 mm. |

Dorsal scute (Fig. 1) with five distinct areas, boundaries parallel, first area without a median line. Dorsal areas without median spines or tubercles, but very tuberculate. First and second areas with scattered hair-tipped tubercles more or less arranged in two definite transverse rows, third and fourth areas with a transverse row of hair-tipped tubercles, a few smaller ones laterad. Fifth area and free tergites with one transverse row of hair-tipped tubercles. Anal operculum with a number of hair-tipped tubercles. Low tubercles along the lateral margin of the abdomen. Eye tubercle (Fig. 2) tuberculate, located on the anterior margin of the cephalothorax, tipped by a long median spine curved anteriorly. Posterior to the eye tubercle is a cluster of three large and several small tubercles. On the anterior lateral margin of the cephalothorax is a small spine. Venter and coxae with scattered small tubercles and hairs. The small tubercles arranged in transverse rows along the free sternites. Ventrally the fourth coxae has a projecting spine on either side at the distal portion. Spiracle not visible.

Legs: trochanters tuberculate, two spines on the posterior margin of the second, third and fourth trochanters. The remainder of the legs except the tarsi armed with many tubercles and hairs. On the femora, especially the fourth (Fig. 4), these tubercles reach spinose proportions with roughly two rows of larger spinose tubercles. Tarsal segments: 3–6–5–5. End group of segments of first leg, 2; of second, 3.

Palpus: trochanter, 0.2 mm. long; femur, 0.5; patella, 0.3; tibia, 0.4; and tarsus, 0.4. Total length, 1.8 mm. Palpus armed as in Fig. 3, and in addition on the prolateral margin, at the median apical portion of the femur, a spine-bearing tubercle, one at the median portion of the patella and only two on the tibia.

Chelicerae normal, with a slight elevation on the proximal segment.

Dorsum yellowish brown with darker mottlings on the margins of the cephalothorax and the eye tubercle. The median and lateral portions of the areas of the dorsum are also darker. The median portion of the cephalothorax and the boundaries of the areas are outlined in a lighter coloration. The median spine of the eye tubercle is almost white. The tubercles of the dorsum are likewise lighter. Venter and coxae concolorous with the lighter areas of the abdomen, somewhat darker at the distal portions of the coxae. Trochanters light, remainder of legs except the tarsi darker brown, tarsi light. Chelicerae concolorous with darker portions of the abdomen, palpi brownish except for the tarsus which is very light.

TYPE LOCALITY.—Male holotype and immature paratype from Barro Colorado, Canal Zone, July 19, 1938 (E. C. Williams, Jr.).

This species is related to *Mexscotolemon acutus* Goodnight and Goodnight, differing

from it in the number of tarsal segments in the second tarsus and in the strong tuberculation of the dorsal scute.

## Stygnommatinae Roewer

### Zygobunus Chamberlin

*Zygobunus* Chamberlin, 1925, Bull. Mus. Comp. Zool., LXVII, p. 245.
*Stygnommatiplus* Roewer, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 543.
*Zygobunus* Roewer, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 546.

Dorsal scute with five distinct areas, first area without a median line, first to fifth areas and free tergites unbedecked. Cephalothorax with a spine between the eyes. Chelicerae heavy, first segment without a dorsal elevation. Femur of palpus without a median apical spine. Third and fourth tarsi with simple double claws, without scopulae. First, second and fourth tarsi with more than 6 segments. Third tarsus with 6. End group of segments of the first tarsus, 2; of the second, 3.

Genotype.—*Zygobunus barronus* Chamberlin.

### Zygobonus barronus Chamberlin

Figures 10, 11 and 12

*Zygobunus barronus* Chamberlin, 1925, Bull. Mus. Comp. Zool., LXVII, p. 245.—Roewer, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 546.

Female.—Total length of body, 4.9 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 3.2 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.5 mm. |
| Femur | 1.9 | 2.2 |
| Patella | 0.8 | 0.9 |
| Tibia | 1.6 | 2.1 |
| Metatarsus | 2.6 | 2.7 |
| Tarsus | 1.5 | 3.1 |
| Total | 8.8 mm. | 11.5 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.4 mm. | 0.6 mm. |
| Femur | 1.8 | 2.3 |
| Patella | 0.8 | 1.0 |
| Tibia | 1.5 | 2.0 |
| Metatarsus | 2.2 | 3.2 |
| Tarsus | 1.5 | 2.2 |
| Total | 8.2 mm. | 11.3 mm. |

Dorsal scute (Fig. 10) with five areas, boundaries of the first two indistinct. Areas parallel to one another. Cephalothorax without a common eye tubercle, eyes widely separated. Midway between the two eyes and slightly posterior is a very small spine. On the anterior margin of the cephalothorax there is a median projection which extends between the bases of the two chelicerae. Abdomen without median spines or tubercles, but dorsal areas and free tergites with transverse rows of small tubercles tipped with hairs. These are larger on the fifth area and free tergites and much reduced on the anterior areas. Venter and coxae armed with numerous hair-tipped tubercles.

Legs: armed throughout with tubercles and hairs, which are especially numerous on the bases of the segments. An unusual situation appears in the number of tarsal segments on the first legs of the animal. On the right side there are six segments, and on the left, seven. The remaining legs have the following number of segments: 12–6–7. End group of segments of first leg, 2; of second, 3.

Palpus: trochanter, 0.6 mm.; femur, 2.2; patella, 0.9; tibia, 1.8; and tarsus, 0.7. Total length, 6.2 mm. Palpus robust, long, with the coxae extending far out away from the body. Palpus armed as in Fig. 12.

Chelicerae (Fig. 11) large, extending far out from the body.

Dorsum dark reddish brown with a darker brown overcast and a darker brown regular marking on the first two areas. Venter concolorous with dorsum, appendages lighter.

Type Locality.—Female holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

## Cosmetidae Simon

## Cosmetinae Cambridge

### Cosmetus pulchrus, new species

Figure 18

Male.—Total length of body, 4.5 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 4.0 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.5 mm. | 0.6 mm. |
| Femur | 5.1 | 12.0 |
| Patella | 0.7 | 1.5 |
| Tibia | 2.8 | 9.9 |
| Metatarsus | 5.5 | 14.9 |
| Tarsus | 2.1 | 5.5 |
| Total | 16.7 mm. | 44.4 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.8 mm. | 0.8 mm. |
| Femur | 7.6 | 11.0 |
| Patella | 1.3 | 0.8 |
| Tibia | 3.5 | 5.4 |
| Metarsus | 7.6 | 12.0 |
| Tarsus | 3.1 | 4.5 |
| Total | 23.9 mm. | 34.5 mm. |

Dorsum (Fig. 18) finely granulate, unarmed except for the stout median spine of the third area. This spine has scattered tubercles at its basal portion. Dorsal areas not clearly indicated. Eye tubercle normal, with a few small tubercles over each carina. Venter and coxae clothed with a few scattered hairs and low tubercles. Very prominent lateral teeth present on the anterior margin of the first coxae.

Legs: extremely long and slender, clothed with only a few scattered hairs. Tarsal segments: 11–21–14–17. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 1.0 mm. long; femur, 1.4; patella, 0.7; tibia, 1.3; and tarsus, 0.5. Total length, 4.9 mm. Palpus flattened, prominent teeth present on the ventral margin of the femur.

Chelicerae normal, second segment slightly enlarged. First segment with a slight elevation dorsally.

Dorsum with ground color of light yellowish brown, entire dorsal scute bordered with white. This white border enlarges at the anterior-lateral margin of the cephalothorax, entirely lacking at the anterior-median margin. The abdomen has small greenish black irregular lines thickly scattered; the cephalothorax has fewer small lines of black. The median spine of the third area is yellowish brown with black mottlings. Venter and coxae reddish brown with scattered small black markings. Legs yellowish brown with irregular small black markings which on the metatarsi have an annulate appearance. They are entirely lacking on the tarsi. Chelicerae and palpi reddish brown with some irregular black markings.

TYPE LOCALITY.—Male holotype from Barro Colorado Island, Canal Zone, February 6, 1936 (W. J. Gertsch).

*Cosmetus pulchrus* shows its closest affinities to *Cosmetus flavipictes* Simon, differing by having a different dorsal color pattern.

## **Cynorta astora,** new species

Figure 13

MALE.—Total length of body, 5.5 mm. Cephalothorax, 2.0 mm. Width of body at widest point, 4.5 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.6 mm. |
| Femur | 3.2 | 5.8 |
| Patella | 1.1 | 1.4 |
| Tibia | 2.1 | 5.0 |
| Metatarsus | 3.3 | 6.5 |
| Tarsus | 2.2 | 4.0 |
| Total | 12.3 mm. | 23.3 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.8 mm. | 0.9 mm. |
| Femur | 4.3 | 6.1 |
| Patella | 1.4 | 1.4 |
| Tibia | 2.7 | 4.5 |
| Metatarsus | 4.1 | 6.7 |
| Tarsus | 2.3 | 3.2 |
| Total | 15.6 mm. | 22.8 mm. |

Dorsum (Fig. 13) finely granulate, a median pair of short heavy spines on the third area and a very small pair of tubercles on the first area. On some specimens these tubercles are so small as to be scarcely discernible. Eye tubercle normal, not tuberculate. Venter and coxae clothed with scattered hairs.

Legs: clothed with scattered hairs, the femora, patella and tibia tuberculate. The tubercles increasing in size so as to be rather prominent on the distal portion of the fourth femora. Third and fourth legs not enlarged over the first and second. Basal segments of the first tarsi slightly enlarged. Tarsal segments: 6–14–8–9. End group of segments of first tarsus, 3; of second, 3.

Palpus: trochanter, 0.4 mm.; femur, 1.2; patella, 0.6; tibia, 1.3; and tarsus, 0.8. Total length, 4.3 mm. Palpus characteristically flattened.

Chelicerae normal with a slight elevation on the dorsal portion of the proximal segment.

Dorsum reddish brown, mottled with darker brown. Bases of spines of the third area darker. A white V between the cephalothorax and the abdomen which is enlarged at the lateral margins. The dorsum has an irregular series of white dots more numerous on the lateral and posterior margins of the dorsal scute and somewhat outlining the areas and the median line. A few white dots on the free tergites. A stripe of white on the posterior margin of the third free tergite. Two white dots on the anal operculum. Venter and coxae concolorous with the dorsum. All appendages somewhat lighter.

FEMALE.—Total length of body, 5.2 mm. Cephalothorax, 2.0 mm. Width of body at widest portion, 4.2 mm.

Identical in appearance with the male, except for lacking the secondary sexual characteristics of the male: the enlarged proximal segment of the chelicerae, the enlarged basal segments of

the first tarsi and the enlarged tubercles of the fourth femora.

TYPE LOCALITY.—Male holotype and male and female paratypes from Barro Colorado Island, Canal Zone, February 12, 1936 (W. J. Gertsch).

*Cynorta astora* is related to *C. scripta* Simon, differing in the dorsal color pattern.

### Cynorta discreta Chamberlin

Figure 14

*Cynorta discreta* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 240.

*C. didyma* CHAMBERLIN, 1925, *ibid.*, p. 241.

*C. discreta* ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 572.

*C. didyma* ROEWER, 1928, *ibid.*, p. 568.

FEMALE.—Total length of body, 4.5 mm. Cephalothorax, 1.8 mm. Width of body at widest portion, 3.6 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.5 mm. |
| Femur | 2.9 | 6.9 |
| Patella | 0.6 | 1.1 |
| Tibia | 1.8 | 5.2 |
| Metatarsus | 3.2 | 7.2 |
| Tarsus | 1.8 | 4.5 |
| Total | 10.7 mm. | 25.4 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.5 mm. | 0.6 mm. |
| Femur | 4.5 | 6.3 |
| Patella | 0.9 | 1.2 |
| Tibia | 2.4 | 3.6 |
| Metatarsus | 4.5 | 6.7 |
| Tarsus | 2.2 | 3.6 |
| Total | 15.0 mm. | 22.0 mm |

Dorsum (Fig. 14) finely granulate, armed only with the median paired tubercles of the first area and the median paired spines of the third area. Eye tubercle normal. Venter clothed only with scattered hairs.

Legs: clothed only with scattered hairs, third and fourth legs not conspicuously enlarged over the first and second. Tarsal segments: 6–13–8–9. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.4 mm. long; femur, 0.9; patella, 0.7; tibia, 0.9; and tarsus, 0.4. Total length, 3.3 mm. Palpus characteristically flattened.

Chelicerae normal, not enlarged.

Dorsum reddish brown with a white V at the junction of the cephalothorax and abdomen. A median white line extends from the apex of the V to the posterior portion of the third area where it joins a transverse line; midway between the median line and the lateral margin on either side is a curved white line. A small transverse line separates the fourth and fifth areas in the median portion. Venter and coxae concolorous, legs lighter, mottled with darker coloration, giving an annulate appearance to the tibia and tarsus. Palpi and chelicerae concolorous with the dorsum.

TYPE LOCALITY.—Female holotypes of *C. discreta* and *C. didyma* from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

An examination of the holotypes of *C. discreta* and *C. didyma* revealed that they were identical.

### Cynorta nannacornuta Chamberlin

Figure 16

*Cynorta nannacornuta* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 242.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 571.

MALE.—Total length of body, 4.7 mm. Cephalothorax, 1.3 mm. Width of body at widest portion, 3.5 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.5 mm. |
| Femur | 3.0 | 5.8 |
| Patella | 0.8 | 1.1 |
| Tibia | 2.0 | 4.5 |
| Metatarsus | 3.4 | 6.3 |
| Tarsus | 1.8 | 5.0 |
| Total | 11.4 mm. | 23.2 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.5 mm. | 0.6 mm. |
| Femur | 4.2 | 5.4 |
| Patella | 1.0 | 1.4 |
| Tibia | 2.3 | 3.3 |
| Metatarsus | 4.3 | 6.2 |
| Tarsus | 2.4 | 2.7 |
| Total | 14.7 mm. | 19.6 mm. |

Dorsum (Fig. 16) finely granulate, the median paired tubercles of the first area extremely small, the paired spines of the third area likewise very small. Eye tubercle normal. Venter and coxae clothed with a few scattered hairs.

Legs: clothed with scattered hairs, third and fourth legs not enlarged over the first and second. Tarsal segments: 6–17–9–9. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.5 mm. long; femur, 1.8; patella, 0.9; tibia, 1.5; and tarsus, 0.4. Total length, 5.1 mm. Palpus characteristically flattened.

Chelicerae slightly enlarged.

Dorsum dark reddish brown with a white V between the cephalothorax and abdomen, a broken median white line on the first three areas. A transverse white line at the posterior margin of the first area and a few small white dots on the first area. A series of four transverse white marks at the posterior margin of the second area, and a bowed transverse line at the posterior margin of the third area. Venter, coxae, chelicerae and palpi concolorous with the dorsum. Legs lighter with a dark overcast.

TYPE LOCALITY.—Male holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

### **Cynorta pleuralis** Chamberlin

Figure 15

*Cynorta pleuralis* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 241.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 567.

FEMALE.—Total length of body, 4.1 mm. Cephalothorax, 1.4 mm. Width of body at widest portion, 3.2 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.5 mm. |
| Femur | 2.7 | 6.1 |
| Patella | 0.8 | 1.1 |
| Tibia | 2.0 | 4.8 |
| Metatarsus | 3.3 | 6.7 |
| Tarsus | 1.8 | 4.5 |
| Total | 11.0 mm. | 23.7 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.5 mm. | 0.5 mm. |
| Femur | 4.2 | 5.4 |
| Patella | 1.0 | 1.1 |
| Tibia | 2.4 | 3.5 |
| Metatarsus | 4.5 | 6.3 |
| Tarsus | 2.7 | 3.4 |
| Total | 15.3 mm. | 20.2 mm. |

Dorsum (Fig. 15) granulate, armed only with the median paired tubercles of the first area and the median paired spines of the third area. Eye tubercle normal. Venter and coxae clothed only with a few scattered hairs.

Legs: clothed only with scattered hairs, third and fourth legs not enlarged over the first and second. Tarsal segments: 6–12–8–9. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.4 mm. long; femur, 0.9; patella, 0.7; tibia, 1.3; and tarsus, 0.6. Total length, 3.9 mm. Palpus characteristically flattened.

Chelicerae normal.

Dorsum reddish brown with a white V between the cephalothorax and abdomen. A median white line broken in the center joins the transverse line at the posterior portion of the third area. On the lateral margin of the first three areas are many irregular white markings joining a longitudinal white line. A few white markings on the fourth and fifth areas. Venter and coxae concolorous. Chelicerae and palpi also concolorous with the dorsum. Legs lighter with dark markings, giving an annulate appearance to the tibia and metatarsus.

MALE.—Total length of body, 4.5 mm. Cephalothorax, 1.5 mm. Width of body at widest portion, 3.2 mm.

Similar in appearance to female. However, the proximal segment of the chelicera is enlarged, and the distal segment has a slight dorsal elevation.

TYPE LOCALITY.—Female holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Males and females from the same locality, February 3, 1936 (W. J. Gertsch).

### **Erginoides punctatus,** new species

Figure 20

FEMALE.—Total length of body, 5.2 mm. Cephalothorax, 1.6 mm. Width of body at widest portion, 3.4 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.3 mm. | 0.4 mm. |
| Femur | 1.8 | 2.7 |
| Patella | 0.6 | 0.9 |
| Tibia | 1.1 | 2.3 |
| Metatarsus | 1.4 | 2.6 |
| Tarsus | 1.3 | 2.7 |
| Total | 6.5 mm. | 11.6 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.4 mm. | 0.5 mm. |
| Femur | 2.0 | 2.7 |
| Patella | 0.8 | 0.9 |
| Tibia | 1.3 | 1.9 |
| Metatarsus | 2.0 | 3.2 |
| Tarsus | 1.5 | 1.6 |
| Total | 8.0 mm. | 10.8 mm. |

Dorsum (Fig. 20) elongate, entire surface finely granulate, without median spines or tubercles. Eye tubercle normal. Venter and coxae finely granulate.

Legs: slender, clothed with a few scattered hairs. A few rows of small tubercles on the femur, patella and tibia of all legs. Tarsal segments: 6–9–6–6. End group of segments of first leg, 3; of second, 2.

Palpus: trochanter, 0.3 mm. long; femur, 0.8; patella, 0.4; tibia, 0.6; and tarsus, 0.5. Total length, 2.6 mm. Palpus characteristically flattened.

Chelicerae normal. Second segment with a slight elevation. A few tubercles on the dorsal surface of this elevation.

Dorsum reddish brown with darker mottlings. The darker mottlings are especially conspicuous along the lateral margin and on the free tergites. The dorsal areas are outlined by a slighter color. On the dorsum there are white markings as follows: on either side of the cephalothorax is an irregular blotch of white, these blotches connected by a thin white line at the junction of the cephalothorax and abdomen, forming a modified V; a few white spots on the dorsal scute, irregularly arranged. An irregular row of transverse white dots across the first three free tergites. Venter and appendages concolorous.

TYPE LOCALITY.—Female holotype from Barro Colorado Island, Canal Zone, February 6, 1936 (W. J. Gertsch).

This species differs from *E. tarsalis* Cambridge in the color pattern and in having fewer segments in the second tarsus. Only two segments were present in the end group of segments of the second tarsus, but the last segment was very long and appeared abnormal so it was thought best to ignore this generic difference until more specimens are available for study.

Roewer states, in his diagnosis of this genus, that the third and fourth legs are enlarged over the first and second. This diagnosis is interpreted from Cambridge's description of *E. tarsalis*. The writers do not believe that Cambridge's diagnosis necessarily implied that the third and fourth legs were conspicuously enlarged at the basal segments.

### **Eucynorta analis** Roewer

*Eucynorta analis* ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 585, Fig. 26.

RECORD.—Barro Colorado Island, Canal Zone, March 15, 1936 (W. J. Gertsch).

### **Eucynortula dorsata,** new species

Figure 19

MALE.—Total length of body, 4.2 mm. Cephalothorax, 1.4 mm. Width of body at widest portion, 3.5 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.6 mm. |
| Femur | 2.9 | 5.9 |
| Patella | 0.8 | 1.0 |
| Tibia | 2.0 | 4.4 |
| Metatarsus | 3.2 | 5.9 |
| Tarsus | 2.0 | 4.5 |
| Total | 11.3 mm. | 22.3 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.6 mm. | 0.6 mm. |
| Femur | 4.1 | 4.9 |
| Patella | 0.9 | 1.1 |
| Tibia | 2.2 | 3.2 |
| Metatarsus | 4.0 | 6.6 |
| Tarsus | 1.7 | 3.0 |
| Total | 13.5 mm. | 19.4 mm. |

Dorsum (Fig. 19) finely granulate, unarmed except for the paired tubercles of the third area. There is a transverse row of very fine tubercles across the posterior margin of the fifth area and the free tergites. Eye tubercle normal, with a few low tubercles over each carina. Venter and coxae granulate with a few scattered hairs. A few very small tubercles on the free sternites.

Legs: long, third and fourth legs not heavier than the first and second. All segments of the legs clothed with hairs. Tarsal segments: 6–16–8–9. End group of segments of first leg, 3; of second, 3. Basal segments of first tarsus somewhat enlarged.

Palpus: trochanter, 0.4 mm. long; femur, 1.4; patella, 1.0; tibia, 1.4; and tarsus, 0.4. Total length, 4.6 mm. Characteristically flattened, a row of teeth on the ventral margin of the femur.

Chelicerae enlarged.

Dorsum reddish brown, mottled with darker brown on the cephalothorax and lateral margins of the abdomen. A white V at the junction of the

cephalothorax and the abdomen. The arms of the V join at the median line where they connect with a median white line which runs to the posterior part of the third area. Here it is joined with a transverse irregular white line. This transverse line has a small anteriorly projecting line midway between the lateral portion and the median line. There is a very short transverse line in the median line between the first and second areas. On the lateral halves of the first two areas is an irregular series of white spots. The tubercles of the third area are somewhat darker. Venter, coxae, chelicerae and palpi concolorous. Legs somewhat lighter, a series of black rings on the metatarsi of all legs.

TYPE LOCALITY.—Male holotype from Barro Colorado Island, Canal Zone, February 6, 1936 (W. J. Gertsch).

This form is related to *Eucynortula ypsilon* Roewer, differing in the dorsal color pattern.

### **Eucynortula sexpunctata,** new species

Figure 21

MALE.—Total length of body, 4.7 mm. Cephalothorax, 1.4 mm. Width of body at widest point, 3.6 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.6 mm. | 0.6 mm. |
| Femur | 2.3 | 4.6 |
| Patella | 0.8 | 1.1 |
| Tibia | 1.8 | 4.1 |
| Metatarsus | 2.2 | 5.5 |
| Tarsus | 1.7 | 2.2 |
| Total | 9.4 mm. | 18.1 mm. |
| | III | IV |
| Trochanter | 0.6 mm. | 0.6 mm. |
| Femur | 3.7 | 5.0 |
| Patella | 1.0 | 1.2 |
| Tibia | 2.1 | 2.2 |
| Metatarsus | 3.7 | 5.7 |
| Tarsus | 2.0 | 2.8 |
| Total | 13.1 mm. | 17.5 mm. |

Dorsum (Fig. 21) finely granulate, unarmed except for the median tubercles of the third area which are very small. Eye tubercle normal, with tubercles over each carina. Venter and coxae clothed with scattered hairs.

Legs: clothed with scattered hairs. Tarsal segments: 6–13–8–9. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.3 mm. long; femur, 1.4; patella, 0.9; tibia, 1.6; and tarsus, 0.5. Total length, 4.7 mm. Palpus characteristically flattened.

Chelicerae somewhat enlarged.

Dorsum reddish brown, mottled with darker. A white V at the junction of the cephalothorax and the abdomen. The arms of the V somewhat widened and irregular at the lateral margins. A broken median white line extends from the apex of the V to the posterior margin of the third area where it meets a transverse bow-shaped white line. Midway between the median line and the lateral margin on the posterior parts of the first, second and fourth areas is a small white spot, making three pair of spots in all. Venter and appendages concolorous. Legs slightly lighter.

FEMALE.—Total length of body, 5.5 mm. Cephalothorax, 1.2 mm. Width of body at widest point, 3.7 mm.

Identical in appearance with the male except that the chelicerae are not enlarged.

TYPE LOCALITY.—Male holotype and female allotype from Barro Colorado Island, Canal Zone, February 12, 1936 (W. J. Gertsch).

*Eucynortula sexpunctata* differs from other species of *Eucynortula* in having a different dorsal color pattern.

### **Meterginoides eutypa** Chamberlin

*Meterginoides eutypa* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 240.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 610.

An examination of the holotype of *Meterginoides eutypa* showed that the basal segments of the third and fourth legs were not enlarged over those of the first and second legs. While this would prevent its inclusion in *Meterginoides* as defined by Roewer (1923), the genotype, *Meterginoides inermis* (Banks), itself did not have conspicuously enlarged third and fourth legs. Hence *M. eutypa* may be included in the genus *Meterginoides,* and *Paecilaemella* Roewer becomes a synonym of *Meterginoides.*

### **Paecilaemana quadripunctata,** new species

Figure 25

MALE.—Total length of body, 5.5 mm. Cephalothorax, 1.5 mm. Width of body at widest point, 4.5 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.7 mm. | 0.8 mm. |
| Femur | 4.5 | 9.2 |
| Patella | 1.2 | 1.6 |
| Tibia | 3.2 | 7.6 |
| Metatarus | 5.6 | 10.5 |
| Tarsus | 2.7 | 5.7 |
| Total | 17.9 mm. | 35.4 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.8 mm. | 0.8 mm. |
| Femur | 6.8 | 9.0 |
| Patella | 1.5 | 1.9 |
| Tibia | 3.8 | 5.0 |
| Metatarsus | 5.4 | 1.3 |
| Tarsus | 3.6 | 4.2 |
| Total | 21.9 mm. | 22.2 mm. |

Dorsum (Fig. 25) granulate, unarmed except for the median tubercles of the third area. Eye tubercle normal. Venter and coxae granulate, clothed with scattered hairs.

Legs: clothed with scattered hairs, legs long, third and fourth legs not enlarged over the first and second. Tarsal segments: 7–15–9–10. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.7 mm. long; femur, 1.5; patella, 1.1; tibia, 1.4; and tarsus, 0.6. Total length, 5.3 mm. Palpus characteristically flattened, a marginal row of teeth on the ventral portion of the femur.

Chelicerae somewhat enlarged.

Color reddish brown, with four irregular splotches of white arranged as follows on the dorsal scute: anterior pair of spots on either side at the posterior portion of the cephalothorax and the anterior part of the abdomen; posterior pair of spots on the third and fourth areas; these spots are along the lateral margins; at the median line, the margin between the cephalothorax and the abdomen has a fleck of white varying in size in different individuals. Venter and appendages concolorous with the dorsum.

FEMALE.—Total length of body, 5.9 mm. Cephalothorax, 1.5 mm. Width of body at widest portion, 4.5 mm.

Identical in appearance with the male, except that the chelicerae are not enlarged.

TYPE LOCALITY.—Male holotype and female paratypes from Barro Colorado Island, Canal Zone, February 8, 1936 (W. J. Gertsch).

*Paecilaemana quadripunctata* is related to *P. halonata* Roewer but differs in the dorsal color pattern.

### PARACYNORTA, NEW GENUS

*Cynorta* (in part) CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 241.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 570.

First and third areas with paired median tubercles, fourth area with paired median spines, remaining areas and free tergites without median armature. Basal segments of the third and fourth legs not conspicuously enlarged over the first and second legs. Secondary sexual characteristics of the male in the enlarged chelicerae. First tarsus with 6 segments, remaining legs with more than 6. End group of segments of both first and second legs, 3.

GENOTYPE.—*Paracynorta confluens* (Chamberlin).

This genus differs from *Cynorta* in the arrangement of the median spines and tubercles.

### Paracynorta confluens (Chamberlin)

Figure 17

*Cynorta confluens* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 241.—ROEWER, 1928, Abh. Naturw. Ver. Bremen, XXVI, p. 570.

MALE.—Total length of body, 4.1 mm. Cephalothorax, 1.4 mm. Width of body at widest portion, 3.3 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.4 mm. | 0.4 mm. |
| Femur | 2.5 | 4.5 |
| Patella | 0.6 | 1.3 |
| Tibia | 1.8 | 4.5 |
| Metatarsus | 3.5 | 6.3 |
| Tarsus | 2.0 | 4.1 |
| Total | 10.8 mm. | 21.1 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.7 mm. | 0.7 mm. |
| Femur | 3.6 | 5.2 |
| Patella | 0.6 | 1.1 |
| Tibia | 2.2 | 3.4 |
| Metatarsus | 4.1 | 6.1 |
| Tarsus | 2.1 | 2.9 |
| Total | 13.3 mm. | 19.4 mm. |

Dorsum (Fig. 17) finely granulate, armed only with the median paired spines and tubercles, eye tubercle normal. Venter clothed with scattered hairs.

Legs: clothed only with scattered hairs. Tarsal segments: 6–13–9–9. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.4 mm. long; femur, 1.5; patella, 0.6; tibia, 1.4; and tarsus, 0.6. Total length, 4.5 mm. Palpus characteristically flattened.

Chelicerae somewhat enlarged. Proximal segment with a slight elevation, distal segment likewise elevated.

Dorsum reddish brown with a white V between the cephalothorax and abdomen. The arms of the V end in irregular white markings. A white median line extends from the V to the posterior part of the third area. A curved transverse line present at the posterior margins of the first, second and third areas, these curved lines loop around and join the anterior ones, three-fourths of the distance to the lateral margin. There is a small white splotch on either side of the second area. Posterior

to the spines of the fourth area is an irregular transverse line. In some specimens there are a few scattered white marks on the fifth area and free tergites; others lack these entirely. Spines and tubercles dark. Venter and coxae concolorous, legs lighter, with irregular black markings which on the tibia and metatarsus give an annulate appearance. Palpi and chelicerae concolorous with the legs.

FEMALE.—Total length of body, 5.0 mm. Cephalothorax, 1.3 mm. Width of the body at the widest portion, 3.6 mm.

Similar in appearance to the male, but the distal segment of the chelicera does not show the proximal elevation.

TYPE LOCALITY.—Male holotype from Barro Colorado, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Males and females from the same locality, July 2, 1938 (E. C. Williams, Jr.).

## GONYLEPTIDAE Sundevall

## Prostyginae Roewer

### BARRONA, NEW GENUS

Dorsal scute with five distinct areas, median line present in the first area. First and third areas with median paired spines, fourth area with median paired tubercles. Second and fifth areas unbedecked. First to third free tergites with median paired spines. Eye tubercle with a pair of spines. Fourth coxae not widened laterally. Tarsal segments: 6–more than 6–6–more than 6. End group of segments of first leg, 3; of second, 3.

GENOTYPE.—*Barrona williamsi*, new species.

This genus is related to *Micropachlus* Roewer, differing in the number of tarsal segments of the third tarsus and the median paired spines of the first area and the first free tergite.

### Barrona williamsi, new species

Figure 26

FEMALE.—Total length of body, 5.4 mm. Cephalothorax, 2.0 mm. Width of body at widest portion, 3.7 mm.

| | I | II | III | IV |
|---|---|---|---|---|
| Trochanter | 0.5 mm. | 0.6 mm. | 0.8 mm. | 0.8 mm. |
| Femur | 3.2 | 6.4 | 4.8 | 6.3 |
| Patella | 0.9 | 1.3 | 0.9 | 1.4 |
| Tibia | 1.8 | 4.5 | 2.2 | 3.6 |
| Metatarsus | 3.2 | 5.5 | 4.5 | 7.2 |
| Tarsus | 2.1 | 4.9 | 2.4 | 3.1 |
| Total | 11.7 mm. | 23.2 mm. | 15.6 mm. | 22.4 mm. |

Dorsum (Fig. 26) with five distinct areas, first area with median line which is very faint. Median paired spines on the first area, in addition a small tubercle on either side of the spine. Second area without median armature, but with three small tubercles on either side. Third area with a large pair of median spines and two small tubercles on either side. Fourth area with a pair of tubercles, fifth area unarmed. Small paired spines on the first three free tergites, and in addition a small tubercle at the lateral margin of each. Another small tubercle on the third free tergite between the median spines and the lateral tubercles. Cephalothorax with a normal eye tubercle which has a small spine over each carina. The median anterior margin of the cephalothorax has a slight projection; anterior lateral margin with four spinules (occasionally three). Venter and coxae armed with scattered tubercles and hairs. A transverse row of small tubercles across each free sternite. Trochanters of legs tuberculate. Fourth coxae with a distolateral spine, quite tuberculate.

Legs: clothed with scattered hairs, small tubercles on the femora, with two small spines at the distal portion of the femora at the articulation with the patellae. Tarsal segments: 6–16–6–7. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.4 mm. long; femur, 1.5; patella, 0.9; tibia, 1.3; and tarsus, 1.0. Total length, 5.1 mm. Palpus normal. Trochanter with a few small tubercles on the dorsal portion. Femur unbedecked. Patella with a hair-tipped tubercle on the prolateral surface, tibia with two large and two small spine-bearing tubercles on the retrolateral surface and two large and three small spine-bearing tubercles on the prolateral surface. Two large and two small spine-bearing tubercles on either side of the tarsus.

Chelicerae normal, with a slight enlargement of the proximal segment.

Dorsum reddish brown, spines of first and third areas nearly black. Free tergites darker. Cephalothorax darker, mottled with light markings. A band of light spots running across the eye tubercle to the anterior margin. Venter and appendages concolorous except for the palpi which are somewhat lighter.

MALE.—Total length of body, 4.5 mm. Cephalothorax, 1.8 mm. Width of body at widest portion, 3.1 mm.

Similar in appearance to female, except for slight variations as follows: the proximal segment of the chelicerae with a greater enlarge-

ment, proximal tarsal segment of the first leg swollen; dorsum much darker, being almost black; a slight variation in the small tubercles of the dorsum, there being on either side of the first area an added tubercle, one less on the second, one less on the third and an additional one on the fourth area.

TYPE LOCALITY.—Female holotype from Barro Colorado Island, Canal Zone, February 12, 1936 (W. J. Gertsch); male paratypes, same locality, July 13, 1938 (E. C. Williams, Jr.)

### ZYGOPACHYLUS CHAMBERLIN

*Zygopachylus* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 243.—ROEWER, 1929, Abh. Naturw. Ver. Bremen, XXVII, p. 231.

Five distinct areas on the dorsal scute, first area with a median line, third area with median paired spines, remaining areas without median paired spines or tubercles. First and second free tergites with median paired tubercles, third free tergite with median paired spines. Eye tubercle without median spine or paired spines. Femur of palpus without dorsal apical spine, but with median apical spine. Tarsal segments: 6–more than 6–6–more than 6. End group of segments of both first and second legs, 3.

GENOTYPE.—*Zygopachylus albimarginis* Chamberlin.

### **Zygopachylus albimarginis** Chamberlin

Figure 28

*Zygopachylus albimarginis* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 243.—ROEWER, 1929, Abh. Naturw. Ver. Bremen, XXVII, p. 231.

MALE.—Total length of body, 3.6 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 1.8 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.3 mm. | 0.3 mm. |
| Femur | 1.8 | 4.3 |
| Patella | 0.6 | 0.7 |
| Tibia | 1.2 | 3.1 |
| Metatarsus | 2.5 | 4.8 |
| Tarsus | 1.3 | 3.4 |
| Total | 7.7 mm. | 16.6 mm. |
| | III | IV |
| Trochanter | 0.4 mm. | 0.4 mm. |
| Femur | 3.0 | 5.4 |
| Patella | 0.9 | 0.8 |
| Tibia | 1.8 | 2.3 |
| Metatarsus | 3.2 | 4.9 |
| Tarsus | 1.7 | 2.4 |
| Total | 11.0 mm. | 16.2 mm. |

Dorsal scute (Fig. 28) with five areas, the first area with ten to twelve small hair-tipped tubercles on either side, also with a very faint median line. Second area without median paired tubercles, but with five to six small hair-tipped tubercles on either side. Third area with an enormous median pair of spines and in addition scattered tubercles. Fourth area with a transverse row of tubercles. First and second free tergites with a transverse row of tubercles; these tubercles very slightly smaller than the median paired tubercles. Third free tergite with paired spines and a few other tubercles. Eye tubercle with three distinct tubercles over each eye. On the cephalothorax, posterior to the eye tubercle, two small tubercles, another small tubercle laterad to the eye tubercle on either side. On the anterior lateral margin of the cephalothorax are two small tubercles. Along the lateral margin of the dorsum extending from the middle of the cephalothorax to the third area is a row of ten to twelve conspicuous large white tubercles ending in a large white spine with an enlarged base. There is some variation in this row of tubercles. In some specimens they are of equal size throughout except for the larger last one. In other specimens they are alternately larger and smaller. Venter and coxae armed with small tubercles and scattered hairs.

Legs: long and slender, clothed with a few scattered hairs. Two spines present at the dorsal apical portion of each femur. Tarsal segments: 6–10 to 12–6–7. End group of segments on the first leg, 3; on the second, 3.

Palpus: trochanter, 0.3 mm. long; femur, 0.7; patella, 0.4; tibia, 0.5; and tarsus, 0.4. Total length, 2.3 mm. Trochanter armed with one spine-bearing tubercle on the retrolateral surface; femur armed only with an apical median spine and a few small tubercles on the dorsal portion; patella unarmed; tibia and tarsus armed on either side by two large and two small spine-bearing tubercles.

Chelicerae normal, second segment with a dorsal elevation.

Color of entire animal reddish brown with darker mottlings on the cephalothorax,

spines concolorous, lateral tubercles white. Venter concolorous with darker mottlings on the free sternites. Appendages brownish with numerous darker mottlings on the palpi and chelicerae.

FEMALE.—Total length of body, 2.8 mm. Cephalothorax, 1.1 mm. Width of body at widest portion, 2.2 mm.

Similar in appearance to male, but with dorsal spines somewhat reduced in size.

TYPE LOCALITY.—Holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Numerous males and females from the same locality, February 6, 1936 (W. J. Gertsch).

In his description of *Z. albimarginis*, Chamberlin stated that the fourth tarsus had six segments. An examination of numerous specimens revealed that there were seven rather than six segments present.

## Pachylinae Roewer

### NESOPACHYLUS CHAMBERLIN

*Nesophacylus* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 244.—ROEWER, 1929, Abh. Naturw. Ver. Bremen, XXVII, p. 228.

Dorsal scute with five distinct areas, second free tergite with a median spine. Five dorsal areas and remaining free tergites without median paired spines or tubercles. Eye tubercle with a pair of short spines. Femur of palpus without dorsal apical or median apical spine. Tarsal segments: 5–more than 6–6–6. End group of segments of first leg, 3; of second, 3.

GENOTYPE.—*Nesopachylus monoceras* Chamberlin.

### Nesopachylus monoceras Chamberlin

Figure 27

*Nesopachylus monoceras* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 244.—ROEWER, 1929, Abh. Naturw. Ver. Bremen, XXVII, p. 228.

MALE.—Total length of body, 9.0 mm. Cephalothorax, 2.2 mm. Width of body at widest portion, 5.9 mm.

| | I | II |
|---|---|---|
| Trochanter | 0.6 mm. | 0.7 mm. |
| Femur | 2.2 | 4.5 |
| Patella | 1.1 | 1.4 |
| Tibia | 1.5 | 3.6 |
| Metatarsus | 2.7 | 3.9 |
| Tarsus | 1.4 | 3.2 |
| Total | 9.5 mm. | 17.3 mm. |

| | III | IV |
|---|---|---|
| Trochanter | 0.7 mm. | 0.9 mm. |
| Femur | 3.6 | 4.5 |
| Patella | 1.5 | 1.8 |
| Tibia | 2.3 | 3.6 |
| Metatarsus | 3.6 | 5.4 |
| Tarsus | 1.5 | 1.3, |
| Total | 13.2 mm. | 17.5 mm. |

First area with four small tubercles on either side, second and third areas with four small tubercles on either side, arranged in a more or less definite row. Fourth area with three small tubercles on either side. Fifth area with six. First free tergite with a similar transverse row of tubercles, second free tergite with tubercles on either side of the median spine, third free tergite with numerous tubercles giving a lobate appearance. Eye tubercle with a median pair of spines, anterior margin of the cephalothorax with a median projection and four tubercles on either side near the lateral margin. A few tubercles just posterior to the eye tubercle. Venter and coxae armed with scattered tubercles and hairs. Fourth coxa with a large apical spine.

Legs: femora, tibiae and patellae very tuberculate. Tubercles almost spinose near the apical portion of the femora. Tarsal segments: 5–7–6–6. End group of segments of first leg, 3; of second, 3.

Palpus: trochanter, 0.4 mm. long; femur, 1.7; patella, 0.7; tibia, 1.1; and tarsus, 0.9. Total length, 4.8 mm. Palpus unarmed dorsally except for the trochanter which has a small apical tubercle. Ventrally the femur is armed with a row of three very small tubercles, patella unarmed, tibia and tarsus armed with two large and two small spine-bearing tubercles on either side.

Chelicerae normal.

Color of animal reddish brown. Cephalothorax mottled with darker brown. Venter and coxae concolorous. Fourth

leg, except for the tarsus, concolorus. Remainder of legs and fourth tarsus, chelicerae and palpi somewhat lighter, mottled with darker brown.

TYPE LOCALITY.—Male holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Female from the same locality, February 13, 1936 (W. J. Gertsch).

## SUBORDER PALPATORES THORELL

### PHALANGIIDAE Simon

### Gagrellinae Thorell

#### Geaya unicolor Roewer

*Geaya unicolor* ROEWER, 1910, Abh. Ver. Hamburg, XIX, fasc. 4, p. 161, Pl. III, fig. 30.

*Embrikia unicolor* ROEWER, 1910, Ent. Rundsch. XXVII, p. 177.

*Geaya unicolor* ROEWER, 1923, Die Weberknechte der Erde, p. 1067, Fig. 1167.

RECORD —Barro Colorado Island, Canal Zone, February 12, 1936 (W. J. Gertsch).

#### Prionostemma coriaceum (Cambridge)

*Leiobunum coriaceum* CAMBRIDGE, 1904, Biol. Centr. Amer., Arach. II, p. 482.—Banks, 1909, Proc. Acad. Nat. Sci. Phila., LXI, p. 232.

*Prionostemma coriaceum* ROEWER, 1910, Abh. Ver. Hamburg, XIX, fasc. 4, p. 177.—Roewer, 1923, Die Weberknechte der Erde, p. 1078.

RECORD.—Barro Colorado Island, Canal Zone, February 6, 1936 (W. J. Gertsch).

#### Prionostemma duplex Chamberlin

Figure 29

*Prionostemma duplex* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 247.

MALE.—Total length of body, 3.0 mm. Cephalothorax, 1.1 mm. Width of body at widest portion, 2.0 mm. Femora of legs: I, 9.4 mm.; II, 13.2 mm.; III, 9.0 mm.; IV, 10.1 mm.

Dorsum (Fig. 29) granulate, unarmed. Eye tubercle canaliculate, smooth above. Venter smooth, a few small tubercles on the coxae. Coxae without lateral teeth.

Palpus without inner patellal apophyses. Palpi armed dorsally with scattered hairs on all segments, a few small black spines on the femur and patella. Ventrally clothed throughout with hair and small black spines on the femur, patella and tibia.

Legs armed throughout with small scattered black spines. Nodules: 0–3–0–1.

Cephalothorax mottled silver and brown. Eye tubercle light at the base, darker above. First segments of the abdomen silvery with a few brown markings, forming an abrupt contrast with the remaining portion of the abdomen. Remaining segments dark brown with a few silvery spots shining through. Venter and coxae light. Trochanters brown, contrasting. Legs light brown. Chelicerae light. Palpus light yellow with brown mottlings on the femur, patella and tibia.

FEMALE.—Total length of body, 3.6 mm. Cephalothorax, 0.6 mm. Width of body at widest portion, 2.2 mm.

Similar to male in appearance, usually more robust.

TYPE LOCALITY.—Holotype from Barro Colorado Island, Canal Zone (W. C. Alee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Males and females from the same locality, February 12, 1936 (W. J. Gertsch).

#### Prionostemma panama, new species

Figure 30

FEMALE.—Total length of body, 5.0 mm. Cephalothorax, 1.3 mm. Width of body at widest point, 3.2 mm. Femora of legs: I, 9 mm.; II, 16 mm.; III, 8 mm.; IV, 10 mm.

Entire dorsum (Fig. 30) granulate, eye tubercle not canaliculate, granulate only above. Eye tubercle slightly higher than wide, a few small hairs over each carina. Coxae and venter granulate, coxae without lateral teeth.

Legs: clothed with scattered hairs. Nodules: 0–3–0–1.

Palpus: entire palpus armed dorsally with thick hairs. Patella without median apophyses, ventrally armed with numerous hairs and small black spines on the femur, trochanter and tibia. Tarsal claw toothed. A few small black spines on the dorsal portion of the femur.

Chelicerae normal.

Dorsum dark reddish brown, eye tubercle light at the base, darker brown above. Median portion of the cephalothorax and folds between the cephalothorax and the abdomen somewhat lighter. Posterior part of the abdomen slightly lighter. On the dorsum there are small depressions which are silvery white, giving the appear-

ance of white dots. These are arranged as follows: on the cephalothorax on either side, two near the lateral margin and two close to the eye tubercle. Between the first and second segments, second and third segments and third and fourth segments of the abdomen, three small dots on either side near the lateral margin. At the posterior margin of the fourth segment, a complete transverse row. Venter slightly lighter than the dorsum, reddish brown. Coxae slightly darker than the venter, trochanters and bases of femora darker than the coxae. All appendages light reddish brown, some mottlings on the palpus.

TYPE LOCALITY.—Female holotype from Barro Colorado Island, Canal Zone, February 12, 1936 (W. J. Gertsch).

This species shows affinities to *P. frontale* (Banks) but differs in the color of the dorsum and in lacking the apophyses on the patella of the palpus.

### **Prionostemma simplex** Chamberlin

Figure 31

*Prionostemma simplex* CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., LXVII, p. 247.

FEMALE.—Total length of body, 3.5 mm. Cephalothorax, 0.9 mm. Width of body at widest portion, 2.3 mm. Femora of legs: I, 9.5 mm.; II, 14.7 mm.; III, 6.5 mm.; IV, 9.0 mm.

Dorsum (Fig. 31) smooth, eye tubercle slightly canaliculate, smooth above. Venter and coxae armed with a few scattered hairs, coxae without lateral teeth.

Legs: sparsely clothed with fine hairs, long and slender. Nodules: 0–3–0–1.

Palpus: armed throughout with small scattered spine-like hairs. Patella with a long apophyses.

Chelicerae normal, supracheliceral lamella smooth.

Dorsum silver with brown splotches. The brown arranged in a transverse row across each segment, more or less broken by silvery circles. Cephalothorax white with brown splotches, more numerous along the lateral margin. Eye tubercle white anteriorly, gray posteriorly. Venter white with a few brown markings on the coxae. Trochanters mottled, slightly darker than the dorsum. Legs brown. Chelicerae light. Palpus whitish with brown markings on all segments but the tarsus.

TYPE LOCALITY.—Holotype from Barro Colorado Island, Canal Zone (W. C. Allee), in the collection of the Museum of Comparative Zoölogy, Cambridge, Massachusetts. Female from the same locality, February 12, 1936 (W. J. Gertsch).

*Prionostemma simplex* and *Prionostemma duplex* are quite similar in appearance; however, *P. simplex* has a long apophyses on the patella of the palpus, and *P. duplex* lacks it entirely.

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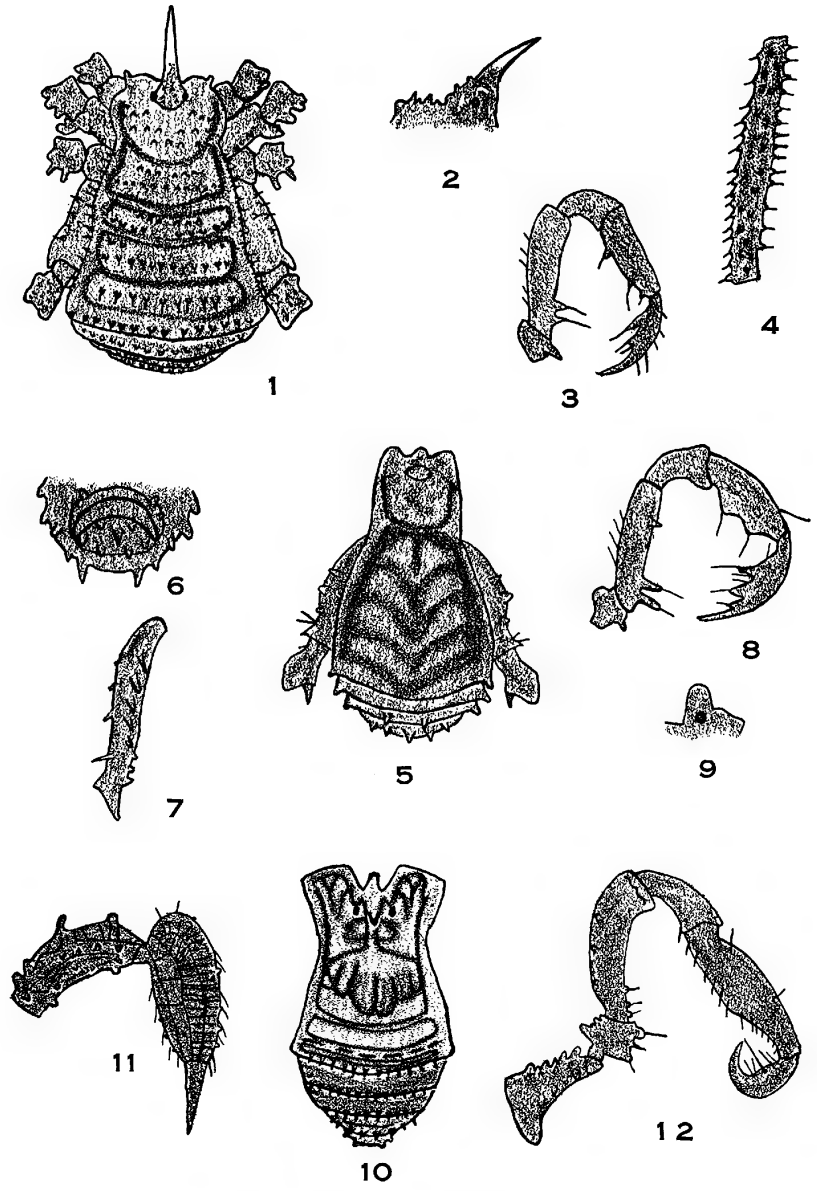
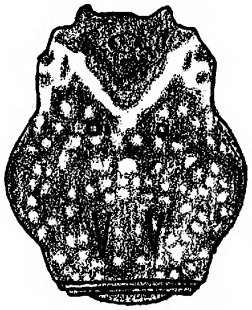



Fig. 1. *Mexscotolemon insularus*, new species, dorsal view of male.
Fig. 2. Idem, lateral view of eye tubercle of male.
Fig. 3. Idem, retrolateral view of left palpus of male.
Fig. 4. Idem, prolateral view of fourth femur of male.
Fig. 5. *Cippanus adornus*, new species, dorsal view of male.
Fig. 6. Idem, anal operculum of male.
Fig. 7. Idem, prolateral view of fourth femur of male.
Fig. 8. Idem, retrolateral view of left palpus of male.
Fig. 9. Idem, lateral view of eye tubercle of male.
Fig. 10. *Zygobunus barronus* Chamberlin, dorsal view of female.
Fig. 11. Idem, retrolateral view of left chelicera of female.
Fig. 12. Idem, retrolateral view of left palpus of female.



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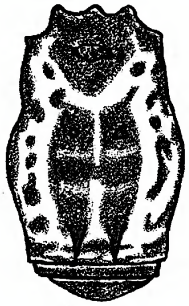

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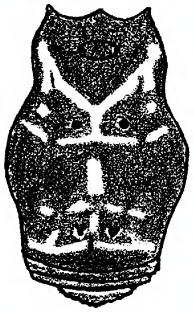

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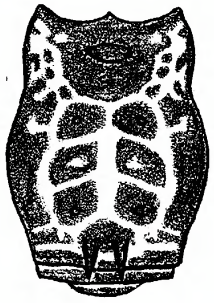

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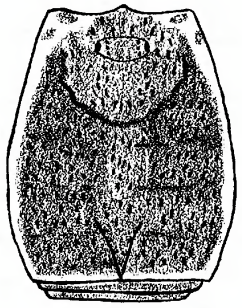

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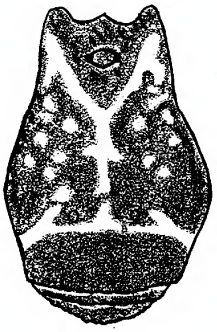

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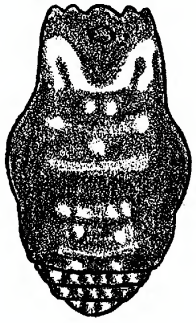

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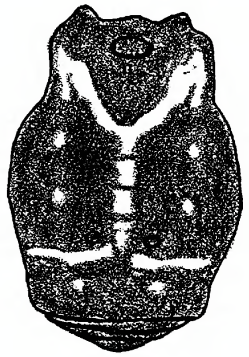

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Fig. 13. *Cynorta astora*, new species, dorsal view of male.
Fig. 14. *Cynorta discreta*, Chamberlin, dorsal view of female.
Fig. 15. *Cynorta pleuralis* Chamberlin, dorsal view of female.
Fig. 16. *Cynorta nannacornuta* Chamberlin, dorsal view of male.
Fig. 17. *Paracynorta confluens* (Chamberlin), dorsal view of male.
Fig. 18. *Cosmetus pulchrus*, new species, dorsal view of male.
Fig. 19. *Eucynortula dorsata*, new species, dorsal view of male.
Fig. 20. *Erginoides punctatus*, new species, dorsal view of female.
Fig. 21. *Eucynortula sexpunctata*, new species, dorsal view of male.

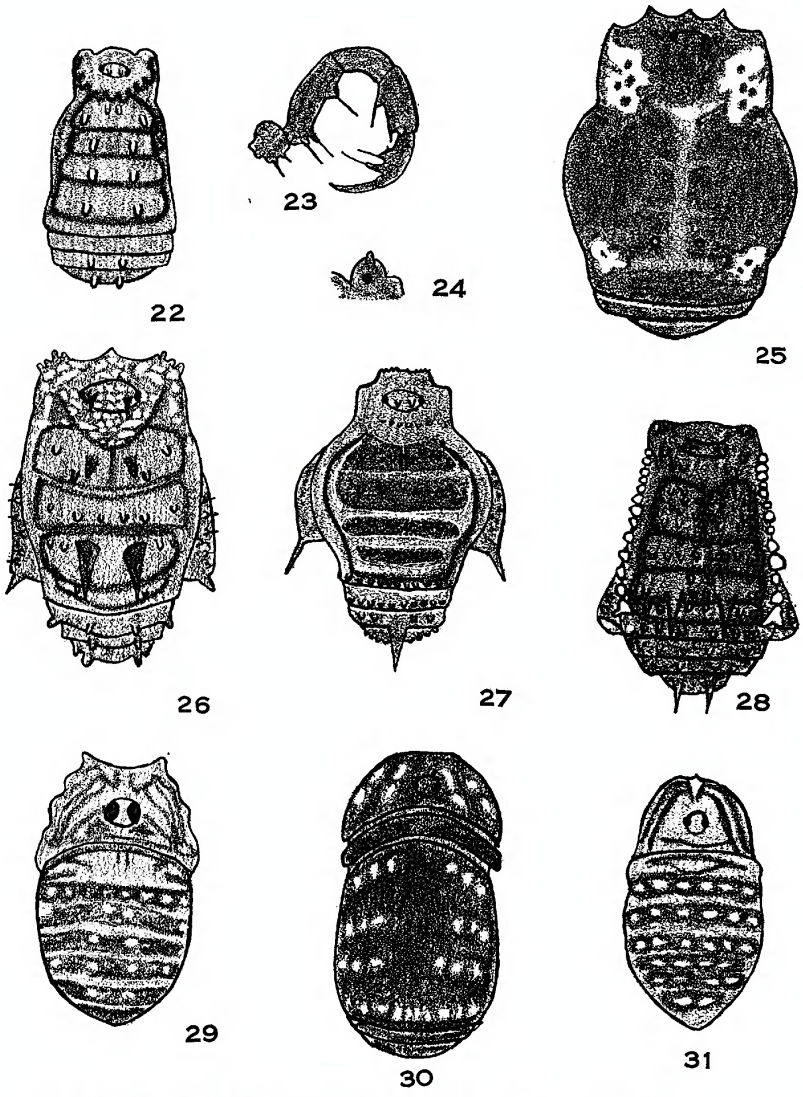


Fig. 22. *Ethobunus simplex* Chamberlin, dorsal view of male.
Fig. 23. Idem, retrolateral view of left palpus of male.
Fig. 24. Idem, lateral view of eye tubercle of male.
Fig. 25. *Paecilaemana quadripunctata*, new species, dorsal view of male.
Fig. 26. *Barrona williamsi*, new species, dorsal view of female.
Fig. 27. *Nesopachylus monoceras* Chamberlin, dorsal view of male.
Fig. 28. *Zygopachylus albimarginis* Chamberlin, dorsal view of male.
Fig. 29. *Prionostemma duplex* Chamberlin, dorsal view of male.
Fig. 30. *Prionostemma panama*, new species, dorsal view of female.
Fig. 31. *Prionostemma simplex* Chamberlin, dorsal view of female.